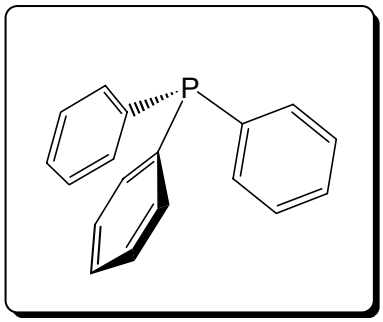
TPP (Triphenylphosphine)

PRODUCT INFORMATION

DESCRIPTION

Arkema Inc. Triphenylphosphine [CAS# 603-35-0] is a white to light tan flaked solid with the following properties:



TYPICAL PROPERTIES

Formula	$C_{18}H_{15}P$
Molecular Weight	262.28
EINECS No.	2100360
Melting Point (°C)	78.5-81.5
Boiling Point (°C @ 760 mm hg)	377
Density (g/mL)	1.2
Bulk Density (lbs/ft^3)	31
% Triphenylphosphine	99.0 (min)
% Triphenylphosphine Oxide	1.0 (max)
Solubility	Insoluble in water. Slightly souble in petroleum ether and alcohol. Soluble in xylene, toluene, acetone, carbon tetrachloride and ethers.

PRODUCT FEATURES

Triphenylphosphine has excellent shelf stability.

RECOMMENDED USES

Triphenylphosphine can be used in Wittig synthesis.

Triphenylphosphine is a standard ligand in homogeneous catalysis.

PACKAGING

Triphenylphosphine is available in 50 lb pails, 220 lb drums and 750 lb tote bags.

Arkema Inc.
2000 Market Street
Philadelphia, PA 19103-3222
(800) 331-7654
Fax: (215) 419 7064

Arkema
Additives Division
4-8 Cours Michelet – La Defense 10
F-92091 Paris la Defense Cex
Phone: (33) 01 49 00 80 80
Fax: (33) 01 49 00 88 40

Arkema Pte Ltd
10 Science Park Road #01-01A
The Alpha Singapore Science Park II
Singapore 117684
Phone: +65 6419 9199
Fax: +65 6419 9188

Email: info.additives@arkema.com

OTHER LIGANDS

Ligand	q [a]	pK_a [b]
Triphenylphosphine	145	2.73
Diphenylcyclohexylphosphine	153	5.05
Dicyclohexylphenylphosphine	161	7.38
Tricyclohexylphosphine	170	9.70
Tribenzylphosphine	165	6.00
Tri-*o* -tolylphosphine	194	3.08
Tri-*p* -tolylphosphine	145	3.84

[a] Cone angle data taken from references (1) and (2)

[b] pK_a data taken from references (1), (3), (4), (5), (6)

REFERENCES- Other Ligands

(7) Rahman, M.M.; Liu, H.Y.; Prock, A.; Giering, W.P. *Organometallics*. **1987**, *6*, 650-58.
(8) Tolman, C.A. *Chem. Rev*. **1977**, *77*, 313-48.
(9) Simal, F.; Demonceau, A.; Noels, A.F. *Angew. Chem. Int. Ed*. **1999**, *38*, 538-40.
(10) Henderson, W.A.; Streuli, C.A. *J. AM. Chem. Soc.* **1960**, *82*, 5791-94.
(11) Allman, T.; Goel, R.G. *Can. J. Chem*. **1982**, *60*, 716-22.
(12) Jackson, R.A.; Kanluen, R.; Poe, A. *Inorg. Chem*. **1984**, *23*, 523-27.

APPLICATIONS

General Area	Reaction / Application	Reagent	Remarks
Reagents for Organic Synthesis	Wittig	$(C_6H_5)_3P=CHR$	Stereoselective olefin synthesis applications in preparation of pharmaceuticals (Vitamin A, prostaglandins steroids), food enhancers (beta-carotene, fruit flavors) and agricultural chemicals (pheromones, juvenile hormone mimics, synthetic pyrethroids).
	Reduction	$(C_6H_5)_3P$	Reduction of quiniones, deoxygenation of epoxides, amine oxides and sulfoxides. Also desulfurization and reduction of sulfur containing organic compounds.
	Halogenation	$[(C_6H_5)_3PX_2]$ $(C_6H_5)_3P/CCl_4$ $(X=Br,Cl)$	Selective conversions of alcohols, phenols and oxides to organic halides under mild conditions.
Additives	Homogeneous Catalysis	$[(C_6H_5)_3P]_xM$ $(ligand)_y$ $(C_6H_5)_3P$ $(C_6H_5)_3P^+RX^-$	Transition metal complexes of TPP for catalyzing a wide variety of organic reactions including hydroformylation, hydrogenation, isomerization and polymerization of olefins. TPP and phosphonium salts for catalyzing numerous polymerization reactions including epoxy resin curing and photopolymerizations.
	Phase Transfer Catalysts	$(C_6H_5)_3P^+RX^-$	Phosphonium salts for catalyzing organic reactions between reactants in separate liquid phases.

NOTE: Please consult the MSDS for updated and detailed safety and health information.

Arkema Inc
2000 Market Street
Philadelphia, PA 19103
215-419-7000
www.arkema.com